



Annual Report of the Australian Bureau of **Statistics**

1977-78



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The Honourable John Howard, M.P.
Treasurer of the Commonwealth of Australia

In accordance with the provisions of section 24 (1) of the Australian Bureau of Statistics Act 1975, I hereby submit to you, for presentation to Parliament, this Report for the year ended 30 June 1978.

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18 August 1978

Contents

1.	Introduction	1
2.	Forward Planning in the ABS. (a) The nature of the planning task (b) The planning framework (c) The 1978-79 work program.	1 1 3 4
	The Output of Economic Statistics	5 5 6 7 7 8 8 9 9 10 10 10 11 11 11
	(c) Social	12 12 13 13 14 14
	(a) Computer re-equipment (b) Data management (c) Statistical methodology (d) Dissemination of statistics	15 15 16 16 17
	(a) Staffing	17 17 18
App	pendix 2 — Expenditure and Receipts pendix 3 — Expenditure by Programs	19 20 21

Note: In this Report, after the first reference, the Australian Bureau of Statistics is referred to as the ABS or the Bureau.

1 Introduction

This is the third annual report by the Australian Statistician on the operations of the Australian Bureau of Statistics.

The principal legislation determining the functions and responsibilities of the ABS is as follows:

- · Australian Bureau of Statistics Act 1975
- * Statistics (Arrangements with States) Act 1956
- Census and Statistics Act 1905

During 1977-78 the following new proposals for the collection of information for statistical purposes were laid before both Houses of Parliament in accordance with section 6 (3) of the Australian Bureau of Statistics Act 1975.

- · Survey of tradesmen and apprentices. Tabled on 15 September 1977.
- Survey of capital expenditure and stocks in Tasmania, 1977–78. Tabled on 23 and 24 May 1978.
- Survey of hearing defects and the use of hearing aids. Tabled on 25 and 26 May 1978.
- Collection of interstate trade statistics for South Australia, 1978-79. Tabled on 29 and 30 May 1978.
- Survey of housing in Sydney, Newcastle and Wollongong. Tabled on 1 and 2 June 1978.

The ABS has again benefited this year from the deliberations of the Australian Statistics Advisory Council, the activities of which are outlined in the Council's Annual Report for 1977–78.

2 Forward Planning in the ABS

Forward planning in the ABS has to cope with a large number of individual collections, whose frequency ranges from weekly to quinquennial or even longer. Most of the less frequent collections have resource requirements that are considerable in relation to total resources available to the ABS and involve long lead times from approval to completion. Contributions from several specialist areas normally are needed for the successful completion of projects.

This section of the report sets out the nature of the planning task, with illustrations from the economic censuses and household surveys fields, outlines the framework within which planning takes place and describes the steps taken in finalising the 1978–79 work program.

(a) The nature of the planning task

A wide range of statistics are sought from the ABS to assist in the formulation and monitoring of policies of many kinds; for example, general financial and economic policies, policies relating to particular industries or to particular localities, and policies relating to the provision of social security, education, medical and welfare services. The ABS is unusual arrang Commonwealth agencies in that it has a statutory obligation to serve the satisfical needs of State Governments, as well as

those of the Commonwealth Government. In addition, businesses, industry associations, trade unions, other non-governmental bodies and a large number of individual inquirers ask for figures to assist in planning their activities, in carrying out their various functions and in following up particular interests.

Decisions on resources to be made available to the ABS therefore need to give weight to the impact of those decisions on users of statistics, but in the time available the ABS often finds itself in a position of advocate for users, as well as explaining the effects on ABS programming and efficiency.

The forward work program of the ABS has to embody judgments about the relevance and usefulness of collections, including new or expanded collections that have been suggested, and at the same time take into account such factors as:

- the need to accommodate major collections within a forward program which allows, to the maximum extent possible, the total workload to be spread evenly over time:
- the amount and timing of development work required before a new collection can be implemented; and
- the need to ensure that service areas of the ABS can support, at the crucial time periods, the total of ongoing and new collections.

Before the collection of statistical information can be undertaken, it is necessary to clearly define user requirements, to determine the most appropriate method of satisfying them, to develop the appropriate concepts, definitions and classifications, to design and test the questionnaire to be used to collect the data, and to design and set up collection and processing systems.

These propositions can be illustrated in the economic censuses field, where there is a very substantial forward planning problem occasioned by the large and varying scale of successive censuses and by the need to develop complex support systems to handle operations economically and effectively. In particular the systems have to ensure that the relationship between business establishments and the enterprises and enterprise groups which own them is taken into account, so as to ensure that, as the industry scope of the censuses is extended, there is no duplication or gap in the coverage of these units and that they are all consistently classified.

The current plan is to conduct manufacturing and mining censuses annually and other censuses quinquennially except agriculture, which is covered by annual censuses mainly concerned with commodities, and a three-yearly agricultural finance survey. The types of censuses conducted to date cover about one-half of economic activity (in terms of their contribution to gross domestic product) and further extensions are planned in respect of the construction industry for 1978-79 and of the transport industry for 1981-82, with a further census of the retail industry (after a gap of six years) for 1979-80. The break in the sequence in 1980-81 is to enable the ABS to absorb the particularly heavy processing load of the retail census. It is intended that a five-yearly cycle will begin again in 1982-83.

It had been intended to conduct a wholesale trade census in respect of 1977–78, but in March 1977 this had to be abandoned because of financial stringency and continuing reductions in staff ceilings. Development of a construction census was begun in 1974 but had to be deferred in early 1976 because of resource constraints. The project was reinstated as part of the forward work program for the years 1977–78 to 1979–80; collection of data will commence in July 1979 and first summary results are expected to be published in July 1980. Preparations involve about seventeen man-years of effort; the lead time of three years from approval to publication of the first summary results would have been longer but for the fact that some six man-years of related work had been undertaken in connection with other projects.

The undertaking of a complex household survey, such as a household expenditure survey or a health interview survey, also requires a large amount of resources and a lead time of up to two years before publication. To develop and prove the questions to be asked in a survey normally requires at least two pilot tests and it is usually necessary to hold a dress rehearsal of all operational and processing aspects of a survey before it is undertaken.

In respect of the timetable for the health interview survey given below, it should be noted that only one pilot test was conducted because many of the survey problems had been resolved in a similar survey conducted in N.S.W. only, late in 1975.

Basic survey development May to August 1976 Pilot test November 1976 Dress rehearsal March 1977 Training of interviewers June 1977 Fieldwork July 1977 to June 1978 Preliminary publication of first quarter's results March to April 1978 Preliminary publication of full year's results December 1978

The quinquennial population census also involves long lead times, with householders' forms needing to be finalised more than a year before the census date because of the time needed for printing of the large number required and for their distribution throughout Australia.

(b) The planning framework

To assist and improve forward planning in the ABS a program/project framework has been developed which enables a co-ordinated approach to the disposition and use of manpower and financial resources across all areas of the ABS. Thirty-four major statistical and service programs have been identified and further subdivided into 125 projects. Broad objectives have been established for each program, taking into account the interdependence of the work of the statistical and service areas of the ABS.

Within this framework a rolling forward work program has been developed. Before provision is made for staffing levels in future years, all proposals for new or extended collections are analysed to ensure that appropriate account has been taken of resource demands on the service areas whose contribution will be essential to successful completion of the proposal. Estimates are made of staffing requirements for proposals judged to be of high priority. Staff estimates for ongoing work and for projects already approved are reviewed and extended a further year ahead. Regard is had to the total resources likely to be available to the Bureau within the three-year period and to the total demands on service areas which the program would entail, so that feasibility studies or developmental activities are not commenced for projects unlikely to be implemented.

The judgments about relative priorities that are involved in drawing up a forward work program are made in the light of continuing consultations with users of statistics. The program is discussed in some detail with the Australian Statistics Advisory Council.

Information from this system is used in the preparation of annual and three-year forward staff and financial estimates for the Public Service Board and the Department of Finance.

As decisions are made by the Government on staffing and finance, figures for the first year of the forward work program become the basis (along with the establishment of positions available to the Bureau) of controlling and monitoring use of resources in all offices of the Bureau. The precise allocations are reviewed periodically during the year to take account of project experience and any changes in circumstances that have occurred or are foreseen.

(c) The 1978-79 work program

At the time of finalising the 1978-79 work program, the situation was that a rigorous scrutiny of resources engaged on all activities of the Bureau, together with some pruning of statistical output, had been undertaken to achieve a reduction in staff numbers of 8½ per cent between June 1975 and December 1977. (An increase in staff ceiling in subsequent months was approved to enable the undertaking of labour force surveys at monthly rather than quarterly intervals.) Administrative procedures had been subject to intensive review, making possible substantial reductions in staff numbers in the finance and general services and personnel management programs.

In order to find resources to commence work on some of the requests for new or expanded collections being urged on the Bureau, those responsible for some ongoing collections were required to achieve further cuts in staff numbers. A continuing series of management reviews is undertaken by officers of the sections concerned, with assistance as necessary from the Planning Section, Management Services Branch and, in some cases, the Public Service Board. Reviews proposed for 1978–79 include the public finance, agriculture, construction, transport, mining, internal trade and manufacturing programs.

Even after forward staff estimates had been reduced by the numbers estimated to result from these management reviews, it appeared that carrying out the work previously included in the program would require staff numbers greater than those likely to be approved by the Government.

One of the collections for which provision was consequently omitted from the estimates was a survey of household income and expenditure in respect of 1979–80. Similar surveys had been undertaken in respect of the years 1974–75 and 1975–76. Their purpose is to obtain information about expenditure patterns of households of different sizes, composition and income level. In addition to providing information on the pattern of expenditure by different types of households, the surveys have been a source of data used in the planning of welfare services, assessing the impact of taxes and government benefits, updating the weighting pattern and component items of the consumer price index and assessing whether there is a need for alternative price indexes for other target groups in the community.

Household income and expenditure surveys are expensive to conduct and impose a considerable response burden on the sample of households who are asked to provide detailed information on income and expenditure and to keep itemised records of expenditure over a period.

A second project under consideration which was omitted from the forward estimates was a feasibility study for a proposed consumer finances survey, which would have collected information on debts and asset holdings by different types of households. Looking at the use of resources beyond 1978–79, it was decided that the agricultural finance survey would be conducted only every third year, following the 1977–78

It had been hoped that the redeployment of staff made possible by computer re-equipment would begin in 1980-81, but with the Government's decision in

February to call new tenders, it has had to be postponed about two years. Senior staff whom it had been hoped would be engaged on bringing the new equipment into use have had to be reallocated to revising tender specifications and evaluating new tenders when they are lodged.

The forward program as thus curtailed required a small increase in staff ceiling for its implementation. In the event the staff ceiling approved by the Government provided an increase smaller than that sought and a further revision in the work program became necessary. The revision was aimed at having the least possible impact on users of the Bureau's output. An attempt was made to reduce staff numbers by pruning large projects rather than abandoning small ones, but that process had already been carried to the point where further pruning would here reduced disproportionately the usefulness of the remaining output. Spreading resources more thinly over the same number of projects would have had the very undesirable result of delaying the availability of statistics whose timeliness is an important element in their usefulness.

A number of projects were identified as having the characteristics of being as selfcontained as possible, so that their termination would not have major repercussion on any related projects and therefore on other users; and as being small to medium in size, so that it was possible not to concentrate the whole of the impact on one sector. After taking into account Ministerial views on relative priorities among the projects thus identified, a decision was taken to terminate (as work in progress is completed) studies of foreign participation in particular sectors of the Australian economy and the quarterly and annual surveys of job vacancies.

3 The Output of Economic Statistics

This section and the next outline the statistical output of the ABS and describe the more important developments which occurred during 1977-78. The Catalogue of Publications 1978 includes concise descriptions of all current ABS publications.

Economic statistics produced by the ABS are derived largely from economic censuses and surveys. The censuses, which have been referred to in Section 2 of the report, are designed to provide detailed information on industry structure and facilitate valid comparisons across geographical areas and between different industries. The surveys of selected business enterprises and establishments are designed to provide timely and regular indicators of economic activity; examples include the monthly and quarterly surveys of retail sales and the quarterly surveys of capital expenditure and stocks.

Economic censuses and surveys are also major sources of data for national accounts estimates and input-output tables. This is especially true of censuses and surveys which deal with the production and consumption of goods and services and associated capital formation. The national accounts require data on establishments and commodities for analysis of production, consumption and capital formation; and data on enterprises for the preparation of income and outlay and capital accounts.

(a) National accounts

The system of national accounts presents, in a systematic and comprehensive way, details of economic transactions that take place in the Australian economy and

between Australia and the rest of the world. The usefulness of the accounts derives largely from the way in which they bring together data from virtually all available sources and attempt to present such data in a conceptually consistent way both for a given period and over time. The accounts are basically in accordance with the United Nations System of National Accounts.

In order to present a current picture of the national economy the accounts are published soon after the end of each quarter. However, much of the more reliable information needed for the accounts does not become available until long after the event and then not necessarily in a form exactly suitable for national accounting purposes, particularly on a quarterly basis. Current quarters' estimates are therefore based on limited data and successive revisions to the estimates have to be made as additional information comes to hand. As in other statistical fields a balance is sought between timeliness and reliability.

Work undertaken during the year suggested that the price increases and frequent currency adjustments experienced in recent years have contributed to the need for larger revisions of quarterly estimates. Problems arising because data from different sources are not wholly consistent in the timing of recording of transactions seem to have been accentuated in these circumstances. It is planned that further investigations into ways of improving the reliability of the national income and expenditure accounts will be undertaken during 1978–79.

Quarterly estimates are published at current and constrant prices. During the year the basis of the constant price estimates was moved from average 1966-67 prices to average 1974-75 prices. In rebasing the estimates, the methodology was reviewed and use was made of a significantly wider range of price indexes and data on expenditure patterns that had become available since the previous rebasing.

During the year some State Government authorities urged the desirability of economic accounts for States being compiled in much the same detail as those now compiled for Australia. To meet this request would require major new data collections and considerable research to resolve conceptual problems. There is to be further discussion of the issue by the Australian Statistics Advisory Council.

To assist users of the national accounts, a description of sources and methods, more comprehensive than that now available, is planned for release during the first half of 1979. The publication will bring together existing descriptions of concepts and methods and will contain previously unpublished information about sources.

Input-output tables provide a detailed measure of the flow of goods and services between industries and a detailed dissection by industry of the domestic production account. Because of the detailed information which the tables provide about the structure of Australian industry, they have been of special use in the IMPACT project, a medium-term model of the Australian economy being developed jointly by the Industries Assistance Commission, the ABS and other departments.

During the year final input-output tables for 1968-69 were published. Preliminary input-output tables for 1974-75 are planned for release in the first half of 1979. In future the ABS plans to prepare input-output tables annually, with the first of the bulletins in this new series scheduled to be available during 1980-81 in respect of 1977-78.

Quarterly indexes of manufacturing production, a further development of the annual indexes published during 1976-77, are planned for release during 1978-79.

(b) International accounts

The international accounts program comprises the provision of statistical information about the balance of payments and overseas investment.

The direct coverage of the balance of payments was improved during the year by the incorporation of the results of a survey of international trade credit; the accounts were also improved by the introduction of estimates of direct investment for the most recent rather than the penultimate quarter. Special articles on the survey of international trade credit and a survey of international shipping and airline operations were included in the annual balance of payments bulletin published in January 1978.

Information provided on overseas investment includes estimates of the flow of investment into Australia, Australian investment overseas, associated income flows and the levels of overseas investment. The project provides data for the balance of payments and information on the sources, nature and industrial distribution of overseas investment and investment earnings.

Publications on foreign participation released during the year and in July 1978 were: Mineral Exploration, 1975–76; Finance Companies, 1976; Life Insurance Business, 1976; General Insurance Business, 1975–76; Registered Financial Corporations, 1976; and Mining, 1976–77.

As indicated in Section 2, the staff ceiling allocated to the ABS for 1978-79 necessitates some redeployment of staff and the foreign participation project will be terminated after studies now in progress in the fields of research and development, 1976-77, and large enterprise groups in manufacturing, 1975-76, have been completed.

(c) Foreign trade

The foreign trade program covers the compilation and dissemination of overseas trade statistics: exports, imports and imports cleared for home consumption; shipping statistics; excise statistics; and statistics of import orders for selected commodities.

In addition to monthly and annual publications, over 2 million pages of computer output of foreign trade statistics (mostly in microfiche form) are issued each year. Also, many users subscribe to a service designed to meet regular requests for monthly or quarterly information on individual commodities.

Developments during the year included:

 The rebasing of the Australian import and export commodity classifications to accord with the Standard International Trade Classification (Revision 2), for implementation from 1 July 1978.

 The preparation of links between the import and export commodity classifications and the Australian Standard Industrial Classification in order to provide overseas trade statistics by industry of origin, anticipated to become available from 1 July 1979.

Redesign of processing systems to cater for the needs of users through the 1980s.
 Overall the aims are to improve the timeliness of the release of statistics, to increase the range of statistics that can readily be made available and to decrease the resources required to produce statistics.

(d) Prices

The major project in the price indexes program is the compilation of the consumer price index. The program also includes production of the export price index and a range of wholesale price indexes relating to inputs and outputs of manufacturing industry and materials used in the building industry.

There is a strong continuing demand for price index data from users concerned with matters such as social welfare, indexation of wages, pensions and rents, contract

adjustments and those involved in economic analysis and policy formulation. There is also a continuing demand for information about the purposes, methods of compilation and uses of the various price indexes.

Preparatory work will commence in 1979 on the next reweighting and review of data items of the CPI, which will be due about 1981. In the absence of the household expenditure survey that had been proposed for 1979-80, sources of data for weighting will be limited for many areas of consumption expenditure, especially for services items, and considerable research and investigation will be necessary in order to obtain satisfactory information.

Preparation of a non-technical description of the CPI is nearing completion.

It is hoped that resources will be available in 1980-81 to commence work on developing an index of import prices to replace the index now compiled by the Reserve Bank and generally regarded as inadequate, and on developing a consumer price index for Darwin. Publication of a new monthly retail food prices index for Darwin is expected to commence before the end of 1978.

Work on reviewing and reweighting the export and wholesale prices indexes has begun; the review of the export price index is expected to be completed by the end of 1978 and work has commenced on reviewing the price index of materials used in building other than house building. Subsequently each of the other wholesale price indexes will be reviewed in turn.

(e) Public finance

The major objective of the public finance program is to provide statistical information on receipts and expenditures of Commonwealth, State and local governments and their subsidiary bodies. The aim is to facilitate assessment of the economic impact of transactions between governments and government enterprises and the rest of the economy; to show the roles of the various levels of government in the undertaking and financing of expenditure programs and the purposes served by these programs; and to provide information for the determination of intergovernmental grants.

Other activities covered by this program include maintaining a data base which links local government financial data and other statistics relating to local government activities; and processing of statistical data relating to incomes, assets, expenditure, tax payable etc., derived from Commonwealth taxation assessments, for use in national accounts estimates and the statistical supplement to the annual report of the Commissioner of Taxation.

Developments during the year included:

 Commencement of an investigation into the feasibility of producing more timely, standardised data for local government to meet the needs of Commonwealth and State Grants Commissions and other government bodies concerned with the provision of financial assistance to local governments.

 Arrangements for the phased transfer of a substantial part of the processing of Commonwealth taxation assessment statistics to the Australian Taxation Office.
 With the extension of computerised operations in the Australian Taxation Office, it will be more efficient for much of the statistical processing to be linked to this system rather than being undertaken as a separate project in the ABS.

(f) Private finance

The private finance program covers compilation of statistics of financial activities in the private sector, with particular emphasis on the activities of the major types of financial institutions such as banks, insurance companies, finance companies, building societies and credit unions. Several of the collections in this field are undertaken in co-operation with other authorities such as the Reserve Bank of Australia, Insurance Commissioners and State Registrars of Building Societies or Credit Unions.

In recent years the major development effort in this area has been on the preparation of a Framework for Financial Statistics, designed to provide a systematic conceptual basis for integrating the various types of financial statistics. A draft of the Framework was completed in late 1977 and is currently being examined and discussed with major users and suppliers of financial statistics. Work on a final version of the Framework will commence shortly.

In conjunction with officers of the Reserve Bank and Treasury, work has begun on ways of rationalising the collection and compilation of financial statistics. It is envisaged that new or revised collections, based on the conceptual standards embodied in the Framework and on administrative and technical arrangements emerging from the joint rationalisation exercise, will be developed and introduced progressively from about 1980.

Planning is well advanced for a 'one-off' survey of insurance brokers.

(g) Agriculture

The agriculture program includes the conduct of an annual census, major commodity surveys, and the agricultural finance survey.

The agricultural census covers some 200 000 holdings and is used to collect statistical information on the production of agricultural commodities. The first results are published some two months after the reference period. State authorities attach particular importance to the availability of figures in respect of small regions.

The agricultural finance survey produces information on the costs, revenues and indebtedness of various agricultural industries. It was changed in 1976–77 from a two-phase collection (10 000 mail questionnaires, 500 field interviews) to a full field interview survey (sample size 3500) to ease respondent burden and improve accuracy.

Savings in usage of staff on the agricultural program have been achieved through the improvement of existing statistical methodologies, the further expansion of computer processing in place of clerical processing and some reduction in the amount of agricultural statistics collected and published. A Working Group has been set up to continue these efforts, in the light of a reassessment of user needs.

(h) Construction

The main projects in the construction program are the monthly building approvals collection, the quarterly building operations collection and the quarterly construction (other than building) collection. The statistics produced give an early indication of trends in activity in the building industry and information on road, bridge, dam and other large-scale engineering projects.

It is planned to conduct a construction census in respect of 1978-79, to provide for the first time detailed information on the structure of the industry including variables such as employment, wages paid, expenses, value added and capital expenditure.

Developments during the year included:

 Investigation into the feasibility of providing quarterly statistics of unsold speculatively built houses held by builders.

- Presentation of a submission to the Committee of Inquiry into Housing Costs, which dealt with the provision of official statistics on housing.
- Commencement of a comprehensive review of building and construction and related statistics, covering aspects such as user requirements, justification and priorities, alternative data sources, collection and processing methodologies and informant burden.
- Design of a survey of housing to be conducted for the N.S.W. Government at about 8000 dwellings in Sydney, Newcastle and Wollongong between August and December 1978, to provide information on the characteristics of the demand for housing.

(i) Transport

There are three main ongoing collections in the transport program: a monthly count of new motor vehicle registrations, a triennial survey of motor vehicle usage, and monthly and quarterly censuses of road traffic accidents.

The survey of motor vehicle usage is undertaken every three years to provide data for use by the Department of Transport in formulating recommendations for the allocation of grants to the States, by State Governments in the planning of road construction and by the ABS in estimating certain household consumption expenditures. The next survey will be in respect of the year to September 1979.

Information on road traffic accidents is derived from the administrative records of relevant State Government authorities. Because of wide divergences between definitions, data items and recording practices observed by the relevant State authorities, publication of Australian aggregates for road traffic accidents is being restricted, from July 1978, to information on persons killed and injured, total number of accidents and number of fatal accidents.

Developments during the year included:

- Commencement of work on the development of a conceptual framework within which a comprehensive range of both transport activity and industry data can be collected 25th analysed.
- Completion of a more efficient computer-based processing system for new motor vehicle registrations, introduced in all States from 1 July 1978.
- Release in August 1977 of preliminary results from the 1976 survey of motor vehicle usage. Final results are expected to be released from mid 1978.

(j) Manufacturing

The manufacturing program includes an annual structural and commodity census of the industry, quinquennial censuses of the electricity and gas production and distribution inclustry, and monthly and quarterly surveys of manufacturing production.

A new processing system incorporating advanced data base techniques will be introduced for the 1977-78 manufacturing and mining censuses, with the aim of producing more timely results and providing more flexibility in meeting ad hoc requests for detailed tabulations.

(k) Mining

The mining program includes an annual structural and commodity census of the industry conducted with the co-operation and assistance of the State Government Mines Departments, quarterly and annual exploration surveys, and the collection of some annual data on the fishing and forestry industry.

(1) Internal trade

The internal trade program includes monthly and quarterly retail surveys, periodic censuses of the retail and selected service industries, quarterly tourist accommodation surveys and regular collections relating to interstate trade of Queensland, Western Australia and Tasmania.

Estimates of the total value of retail sales in Australia are derived from the monthly retail survey; estimates of the value of retail sales in each State for twelve main commodity groups from the quarterly retail survey; and statistics on the structure of and commodities involved in retail trade and selected service industries from periodic retail censuses.

Quarterly tourist accommodation surveys provide statistics of monthly occupancy rates and takings from accommodation, and information on employment and capacity of tourist accommodation establishments. This information is available at a State level as well as for some important regions. To lessen costs to ABS and to respondents, certain types of establishments are planned to be included in the surveys only on a rotational basis.

Developments during the year included:

- Planning for a sample survey of value of interstate trade of South Australia, to be undertaken at the request of the South Australian Government in each of the four quarters of 1978-79.
- Discussions with major users of retail trade statistics to determine their requirements from the retail surveys, which are to be redesigned on the basis of new benchmarks from the 1979-80 retail census.

(m) Enterprise statistics

The program provides statistics on the operations of business enterprises derived mainly from integrated economic censuses, and surveys of key economic indicators such as capital expenditure and stocks.

Enterprise statistics derived by manipulating census data for enterprises and their component establishments are used in studies concerned with the structure and performance of business undertakings. Those currently being produced are based on the 1974–75 integrated economic censuses and will cover the manufacturing sector and the electricity and gas production and distribution sector.

Developments during the year included:

- The collection of statistics of manufacturers' sales, expected sales and orders as part of the quarterly survey of stocks.
- A survey of the research and experimental development undertaken by the private business sector in 1976–77.

(n) Classification

Work continued on the revisions of the Australian Standard Industrial Classification, to be implemented as from the 1977-78 economic censuses, and on the Australian Standard Commodity Classification, published in April 1978, which provides a link between existing classifications of manufactured goods in overseas trade and commodity production statistics. Further development is planned to provide a classification which maximises the compatibility between production and trade statistics of all goods, and provides a standard classification for services. Associated work on the development of concepts and standards in economic statistics is also an important element in the program of economic censuses and surveys.

4 The Output of Demographic, Social and Manpower Statistics

The demand for population estimates and population projections, particularly from government agencies for use in their forward planning and policy formulation, has increased in recent years. Population estimates are being requested at more frequent intervals, in greater detail, for a wider range of demographic variables and often in respect of small geographical areas.

At the same time, Commonwealth and State Government needs for a greater range of social statistics have become increasingly evident, particularly in the fields of manpower, health, education, social welfare, and crime and justice. The ABS response has been along two broad lines.

The first involves the development, in conjunction with Commonwealth and State Government departments, of systems which will enable statistics to be produced as a by-product of the administrative processes undertaken by those organisations. The large number of agencies involved, and the complexity of data requirements in the social policy area, at times creates significant problems, particularly for data processing systems.

The second involves the use of the ABS household-based sample survey system to obtain statistics not readily available from other sources. The Population Survey is used mainly to collect information on changes in employment and unemployment levels, as well as associated information on occupational status, occupation, hours worked and so on. Supplementary surveys are conducted in conjunction with the Population Survey to obtain information on particular aspects of the labour force or other demographic and social topics. For example, information has been collected in past surveys on income distribution, earnings of wage and salary earners, labour mobility, migration within Australia, child care needs, and the extent and types of chronic illnesses in the community.

(a) Population census

A major source of information on demographic and social characteristics of the population is the population census, which is required by legislation to be held every fifth year. The census also provides benchmark information for periodic household surveys conducted by the ABS and for demographic estimates between censuses.

The detailed processing of data from the 1976 Census of Population and Housing commenced during July 1977. The data preparation phase, which involved the transfer of data from a 50 per cent sample of census schedules to computer tape, was completed as planned in April 1978. The further extensive computer processing of the resultant data files, necessary before they can yield results meaningful to users, is under way. Small-area summary computer files are being released progressively.

The year's delay in commencing detailed processing of the 1976 census schedules means that it has overlapped with planning for the 1981 census. The major current elements of the 1981 census planning are census methods and the evaluation of questions to be asked. Advertisements were placed in major newspapers in November 1977 seeking public submissions on the content of the census and a direct approach was made at the same time to Commonwealth Government departments, State Governments, known users and civil liberties organisations.

More than 1300 submissions have been received for topics to be included in the 1981

census and about sixty for the exclusion of topics. The ten topics receiving most support are: income, occupation, birthplace, type of dwelling, educational qualification, internal migration, journey to work, industry, racial or ethnic origin and fertility.

Most submissions support the questions asked in the 1976 census but more than forty new topics have been proposed. Eleven submissions were received requesting the exclusion of names on census schedules. The possibility of doing this is being tested again.

There are four stages in the selection of topics for the 1981 census:

- (i) The invitation of submissions for the inclusion or exclusion of topics.
- (ii) An examination of issues raised in the submissions and consultation with the Australian Statistics Advisory Council. Before the ABS can complete a report on the feasibility of including topics and the effects on users of statistics of including or excluding topics, considerable testing and evaluation of questions will have to be undertaken.
- (iii) Consideration by the Government.
- (iv) The passage of legislation, including the specification of topics to be included in the census forms. This will have to be completed during the first half of 1980, in order to allow time for printing.

Two field pretests for the 1981 census were conducted at Wangaratta in November 1977 and Bathurst-Orange in February 1978. They were designed to test the feasibility of adopting certain technical p. ocedures, such as the use of field sampling procedures in the census, the use of machine-readable forms and alternative schedule formats.

(b) Demography

The demography program covers the production of estimates and projections of the Australian population and the provision of details on its demographic characteristics.

Following the 1976 census two innovations were made to the methods used for making population estimates. First, adjustments were made to take account of census under-enumeration in both the 1976 and 1971 censuses. Second, the definition of net overseas migration now excludes arrivals and departures for less than a year, so that quarterly changes in the estimated population now relate to the resident population. Work is also progressing on an estimation model which it is hoped will improve the quality of estimates at the local government level.

The ABS plans to publish regular annual projections for Australia and the States, starting in 1978-79.

(c) Social

The major objective of the social program is to provide regular and timely statistics relating to crime and justice, education, health, welfare and other social matters.

In conjunction with the Department of Social Security and State Government Welfare departments, the ABS is undertaking a project designed to improve the range of statistics available for policy purposes. A national statistical framework has been developed which, when implemented by the relevant departments, will guide production of a range of State and national statistics about children in care.

Developments during the year included:

 Commencement of work on a national framework to facilitate the development of statistics from various income maintenance programs.

- A review of crime and justice statistics, in consultation with Commonwealth and State Attorney-General's Departments, the Australian Institute of Criminology and police authorities, with a view to upgrading the quality and range of available statistics.
- A review of health statistics, particularly statistics of hospital morbidity, in co-operation with the National Committee on Health and Vital Statistics and State health authorities. Progress has been made towards developing a common set of State and Territory data on hospital morbidity, and extending its scope to cover all general hospitals.
- The development in conjunction with the Tertiary Education Commission of a computer-based system of university student statistics. It is intended to replace progressively the existing manual systems in other areas of education statistics with more flexible and cost-effective computer-based systems.

The successful use of administrative records for the production of social statistics ultimately depends upon the willingness and ability of relevant government agencies to supply the ABS with data from their administrative records in an appropriate form. The growth in both the volume of records to be processed and the range of social programs about which statistics are required is putting increasing demands on resources available to the ABS for coding and data preparation. The future of important social statistics which can be obtained only from the administrative records of government agencies depends on the extent to which these agencies can actively participate in the process of data gathering and assist the ABS by supplying the data for statistical processing in a form capable of direct input to its computers.

(d) Social surveys and indicators

The social surveys and indicators program includes the analysis and production of statistics on social matters derived from household-based surveys and the production of social indicator information.

A health interview survey was conducted throughout 1977-78. Preliminary results, based on data obtained in the first three months of the survey, were published in April 1978 and further publications will be produced progressively over the next twelve months.

Following a long delay because of serious processing problems, results from the 1975 general social survey are now becoming available. The survey covered four topics: the Australian family (including a special section about one-parent families); away-from-home leisure activities; gun ownership; and victims of crime. Results of the family survey section have been given priority in order to meet the statistical needs of the Family Research Unit at the University of New South Wales, which is undertaking research into the subject on behalf of the Department of Social Security. It is expected that results of the remaining three sections of the survey will become available in the next few months.

(e) Manpower

The manpower program is concerned with the production of statistics on the Australian labour force, including details of its components and characteristics, particularly employment and unemployment, earnings, hours worked and working conditions.

In September 1977 the Government decided that the frequency of the labour force survey should be increased from quarterly to monthly, with effect from February 1978. The collection of data on supplementary topics in conjunction with the labour force survey was suspended from February to June 1978 while monthly survey

operations settled down and only a limited number of topics were surveyed during the year; they were:

- · multiple job holding
- · distribution of weekly earnings of employees
 - leavers from schools, universities and other educational institutions

Limitations on supplementary surveys, imposed by the strict processing timetable for monthly labour force surveys, made it necessary to plan for the introduction of an annual special supplementary survey.

Developments during the year included:

- Preparations for the first annual special supplementary survey, to be conducted early in 1979 and to include working conditions and non-wage employee benefits.
- Introduction into the labour force survey in November 1977 of a new sample and a revised questionnaire designed to measure labour force characteristics more accurately.
- A sample survey of private and government employers, conducted at the request
 of the Committee of Inquiry into Education and Training, in order to obtain
 information on the numbers of apprentices in Australia and the numbers, ages
 and qualifications of employees working as tradesmen, as at 30 September 1977.
- Revision of labour force estimates to incorporate new population benchmarks based on the 1976 population census figures adjusted for under-enumeration.
- An investigation of methods of revising estimates of numbers of civilian wage and salary earners, to allow for under-enumeration in the previously adopted population census benchmarks and to reduce the disparity between this series and the corresponding estimates from the labour force survey.

5 Other Activities

Two major developmental undertakings — computer re-equipment and data management — required the investment of a great deal of effort and skilled manpower during 1977-78.

(a) Computer re-equipment

The present computing equipment operated by the ABS comprises thirteen medium to large machines and six smaller ones, located in Canberra and the State capitals. All except two of the larger machines are old (some have been operating three shifts a day for fourteen years), inflexible and expensive to maintain and to operate.

At the time of last year's annual report, evaluation of tenders invited in October 1976 for new equipment was nearing completion. Recommendations as to the tenders which should be accepted were endorsed by the Interdepartmental Committee on ADP in October 1977 and submitted to the Government. In February 1978 the Government decided that new tenders should be called.

A review was then made of ABS requirements and developments in computer technology in the period since the previous specification was written. The specification was revised also in the light of experience gained in the evaluation of the previous tenders and comments made by the independent assessor appointed by the Government in May. These revised specifications were endorsed by the IDC in June. At the time of writing, new tenders have not yet been called.

In addition to the cost to the ABS of the wasted effort of the past two years, the two years' delay (if tenders are invited soon) in replacing the equipment means

perpetuation for that period of high operating and maintenance costs and involves a risk of a major equipment breakdown.

(b) Data management

In broad terms the data management project is concerned with the development of a more coherent and responsive statistical service through the improved description, organisation, processing and dissemination of data. Currently it is concerned mainly with planning and co-ordinating preparations for redesign and implementation on new equipment of the large number of computer systems used in processing the great variety of statistical projects undertaken by the ABS.

For this purpose, statistical projects are being grouped into two broad categories. The first category comprises several large projects which service users' needs very inadequately, which are expensive to operate and which are unable to respond readily (if at all) to change. Such projects require a thorough re-examination in terms of users' statistical requirements and in terms of the broad approach taken to data collection, processing and dissemination. As this re-examination is completed and choices have been made between the available options, work will commence on developing appropriate computer processing systems.

The other category comprises projects which adequately meet the needs of users and which therefore require little change in statistical output or general strategy. The task of designing processing systems for these projects on the new equipment is simplified accordingly.

It needs to be emphasised that, in order to take account of the operating characteristics of the new equipment and to take full advantage of the modern data processing technology available, it will be necessary to redevelop the processing systems for virtually all the ABS's computer-based statistical projects, yet actual design of new processing systems can only proceed to a certain point before it becomes necessary to know the identity and characteristics of the new equipment to be acquired.

In parallel with the design of new data processing systems for both categories of projects outlined above, an important development task will be the progressive establishment of an appropriate data processing environment, comprising the data handling and statistical processing 'software' systems which provide the facilities necessary for the construction and operation of individual data processing systems, together with the controls, standards and procedures required to govern access to these facilities and to data.

Redevelopment of processing systems to use the new equipment will take a number of years, during which existing computing equipment will be phased out in stages.

(c) Statistical methodology

A major feature of official statistics during the past thirty years has been increasing use of the techniques of mathematical statistics. Specialised units have been established in the ABS to provide a service in sampling, time series analysis and other mathematical statistical techniques. Research has been undertaken into sampling theory and the conduct of sample surveys, into the use of time series methods for model building, forecasting and seasonal adjustment, and into the use of specialised statistical techniques for analytic purposes.

Specialist services are provided to other areas of the ABS and to other government agencies on a consultative basis. The time series analysis unit participates in the development and operation of the Treasury-ABS national income forecasting model and is developing the national income forecasting component of the IMPACT model.

(d) Dissemination of statistics

In 1977-78 the ABS published 631 monthly, quarterly or annual titles, in a total of 1875 issues. These ranged from single-sheet publications to volumes such as the *Year Book of Australia*.

PUBLICATIONS ISSUED DURING 1977-78

				Nu	mber of	Titles			
Frequency	Canberra Office	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Total	Number of Issues
Annual	122	40	32	66	34	46	36	376	376
Quarterly	43	7	6	9	6	6	4	81	324
Monthly	56	9	6	6	3	6	5	91	1092
Other		4	4	5	10	6	2	83	83
Total	273	60	48	86	53	64	47	631	1875

The Catalogue of Publications includes a complete list of all ABS publications, a concise description of their contents and a comprehensive index of items covered. Copies of the Catalogue are available free of charge on request from all ABS Offices.

Although publication is the main way in which statistics are disseminated by the ABS, a large amount of more detailed, non-confidential information is made available on request in the form of computer printout, microfiche or magnetic tape to meet the needs of users.

(e) Co-ordination

The ABS maintains regular contact with Commonwealth and State Government departments and authorities in order to be aware of their statistical activities, their use of existing statistical collections, and their present and future statistical needs.

Officers outposted to other governmental departments and authorities generally have the role of co-ordinating statistical operations between these bodies and the ABS, ensuring the observance of statistical standards in these bodies, and encouraging an integrated approach to statistical development.

The ABS also provides ad hoc advice and assistance to special purpose bodies such as government committees of inquiry. During 1977–78, ABS officers were seconded to the supporting staff of the Review of Post-arrival Programs and Services to Migrants, chaired by Mr F. E. Galbally, the Committee of Inquiry into Education and Training, chaired by Professor B. R. Williams, and the Study Group on Structural Adjustment, chaired by Sir John Crawford.

6 Staffing and Finance

(a) Staffing

In accordance with government policy on staff ceilings, the number of ABS staff was reduced in each of the last three years. The net reduction in 1977-78 included an increase of forty-five in the ABS ceiling to allow the monthly labour force survey to be undertaken.

Staff numbers and their distribution over the various offices of the ABS are given in the following table, which excludes field agents hired outside the Public Service Act. During the period covered, reductions occurred in all offices except Darwin. Departmental staff ceilings are now in terms of operative staff and exclude those on leave for periods of twelve weeks or longer. The information contained in the table for previous vears has been adjusted to this basis.

TOTAL OPERATIVE ABS STAFF

30 June 1975	30 June 1976	30 June 1977	30 June 1978
1612	1587	1567	1556
592	534	500	510
485	440	439	426
337	343	320	319
257	251	251	246
235	231	228	226
144	135	128	124
8	14	13	16
_	5	61	1 -
3670	3540	3507	3423
	1975 1612 592 485 337 257 235 144 8	1975 1976 1612 1587 592 534 485 440 337 343 257 251 235 231 144 135 8 14 _ 5	1975 1976 1977 1612 1587 1567 592 534 500 485 440 439 337 343 320 257 251 251 235 231 228 144 135 128 8 14 13 — 5 61

Appendix 1 shows the distribution of operative staff over the broad programs of activity undertaken by the ABS as at 30 June 1978.

(b) Finance

ABS expenditure in 1977-78 was \$58.2 million, of which \$4.7 million was on wages and salaries for staff engaged in the data preparation phase of the detailed processing of the 1976 population census.

In accordance with government policy, the ABS does not charge departments and government authorities for most services provided to them. However, as from I July 1978 they will be charged for certain computer services provided.

Receipts during 1977–78 totalled approximately \$821 000 and came mainly from the sale of publications, special compilations of overseas trade statistics and the recovery of costs associated with computer services provided by the ABS to the Tasmanian Government and those formerly provided to the Papua New Guinea Government.

Detailed statements of ABS expenditure and receipts for 1976–77 and 1977–78 and estimates for 1978–79 are shown in Appendix 2.

An analysis of the 1977-78 ABS expenditure by program is shown in Appendix 3. The most costly statistical programs in 1977-78 (including an estimate of their use of service programs) were population census, manpower, manufacturing, agriculture, internal trade, foreign trade and public finance.

DISTRIBUTION OF FULL-TIME OPERATIVE STAFF (a) AS AT JUNE 1978

Program	Canberra	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Total
Executive		3	3	2	3	3	3	1	42
National accounts	. 49	3	1	-	-	-	-	_	53
International accounts	. 69	_	-	-	_	_	-	-	69
Foreign trade	. 91	_	_	-	_	_	-	_	91
Prices	. 36	. 14	12	7	6	7	2	1	85
Public finance	. 30	11	8	9	6	5	4	-	73
Private finance	. 47	2	_	2	1	_	_	-	52
Agriculture		48	33	34	20	28	8	1	204
Construction	. 23	32	26	14	8	8	4	1	116
Transport		3	4	13	6	4	2	_	51
Manufacturing		42	43	16	11	10	5	_	150
Mining	. 10	9	5	4	_	2	_	_	30
Internal trade	. 19	15	17	17	13	23	13	1	118
Enterprise statistics	. 21	7	8	5	5	-2	1	1	50
Classification		1	1	3	1	1	_	_	27
Economic statistics integration	n 20	50	45	17	11	12	2	1	158
Economic censuses system		_	_	-	_		_	_	16
Population census		4	6	2	4	2	2	1	69
Demography		14	15	10	4	4	3	2	80
Social	. 32	28	15	18	14	8	7	_	122
Social surveys and indicators		_	_	_	_	_	_	_	14
Manpower		34	24	17	19	10	6	-	180
Statistical applications		_	_	_	2	_	_	-	38
Statistical services		_	4	5	2	3	3	_	56
Population survey operation		27	21	20	17	15	6	4	137
Computer services planning.		_	_	_	_	_	_	_	47
Computer systems developmen		7	6	7	10	6	6	_	127
Computer technical systems									
and production	. 236	73	50	46	33	38	31	-	507
Co-ordination		2	2	2	6	_		_	49
Data management		1	1	_	_	2	_	_	16
Information services		19	20	15	11	10	4	_	143
Establishments and methods		2	1	_	2	_	_	_	30
Finance and general services		45	42	24	24	17	9	1	286
Personnel management		14	13	10	7	6	3	1	137
Total		510	426	319	246	226	124	16	3423

⁽a) Excludes staff on long service leave, maternity leave, extended sick leave etc. for periods of twelve weeks or longer.

STATEMENT OF EXPENDITURE AND RECEIPTS FOR 1976-77 AND 1977-78 AND ESTIMATES FOR 1978-79

EXPENDITURE

Iter	n	Actual 1976–77	Actual 1977–78	Estimate 1978-79
		\$ 000	\$ 000	\$ 000
1	Salaries	40 105	46 592(a)	44 910
2	Overtime	282	298	330
Tot	tal Sub-division 1	40 387	46 890	45 240
1	Travel and subsistence	522	698	723
2	Office requisites	1 511	1 444	1 839
3	Postage and telephones	2 279	2 528	2 816
4	Office services	286	337	360
5	Publications	1 065	1 274	1 268
6	Computer services	3 045	2 671	2 065
7	Payments to agents	7 865(b)	1 778	2 584
8	Freight and cartage	265	88	113
9	Consultants	18	_	_
10	Incidentals	207	356	365
Tol	tal Sub-division 2	17 064	11 173	12 133
Tot	tal Division	57 451	58 063	57 373
Spe	ecial Appropriation — Australian Statistician	29	40	44
AS	AC	5	6	7
To	tal Special Appropriation	34	46	51
Ca	pital works and services - plant and equipment	274	127	1 592
Tol	tal expenditure	57 759	58 236	59 015

⁽a) Includes \$4 658 469 for payment of salaries of staff, including temporary staff, employed in the data preparation phase of detailed processing of the 1976 Census of Population and Housine.

RECEIPTS

Туре	Actual 1976-77	Actual 1977-78	Estimate 1978-79
	\$ 000	\$ 000	\$ 000
Proceeds from 'for sale' publications (a)	140(b)	206	223
Proceeds from sale of special compilations of overseas trade statistics	118	117	118
Recovery of costs for use of ABS computers by client organisations	190	280	2 080
Recovery of costs of computer services for Papua New Guinea Government (d)		111	_
Miscellaneous receipts	29	107	81
Total	477	821	2 502

⁽a) Includes an estimate of sales through AGPS.

⁽b) Includes \$6 619 000 for payment of census collectors for the 1976 Census of Population and Housing.

⁽b) No Year Book of Australia issued during 1976-77.

⁽c) From 1 July 1978 departments are to recover costs from client organisations for the use of computer facilities.

⁽d) This arrangement terminated on 30 June 1977. The receipt in 1977-78 is in respect of work performed up to 30 June 1977.

DISTRIBUTION OF EXPENDITURE BY PROGRAM FOR 1977-78

The following table shows total ABS expenditure for 1977-78 allocated to statistical and service programs. The allocation of certain components of expenditure, e.g. salaries, is reasonably accurate but for others, e.g. postage and telephones, it is distributed on a pro rata basis. The table also shows an estimate of the cost of each statistical program, after allocating costs of service programs according to estimates of their use by statistical programs.

Program	Estimated Direct Expenditure		Estimated Total Expenditure
	\$ 000	\$ 000	9/0
Executive	1 119	(a)	_
National accounts	785	1 512	2.6
International accounts	1 113	1 693	2.9
Foreign trade	1 498	3 321	5.7
Prices	1 245	1 733	3.0
Public finance	1 184	2 928	5.0
Private finance	777	1 220	2.1
Agriculture	2 539	4 449	7.6
Construction	1 476	2 850	4.9
Transport	718	1 215	2.1
Manufacturing	2 095	4 596	7.9
Mining	417	967	1.7
Internal trade	1 579	3 702	6.4
Enterprise statistics	656	2 211	3.8
Classification	465	(a)	_
Economic statistics integration	1 847	(a)	_
Economic censuses system	371	(a)	_
Population census	6 137	8 361	14.4
Demography	976	2 408	4.1
Social	1 562	2 355	4.0
Social surveys and indicators	403	1 462	2.5
Manpower	2 251	7 855	13.5
Statistical applications	649	705	1.2
Statistical services	979	(a)	
Population survey operations	4 056	(a)	
Computer services planning	684	(a)	
Computer systems development	1 658	(a)	=
Computer technical systems and production	9 631	(a)	
Co-ordination	893	(a)	
Data management	285	(a)	
Information services	2 917	(a)	
Establishments and methods	491	(a)	
Finance and general services	3 095	(a)	
Personnel management	1 686	(a)	
Non-ABS (b)	-	2 693	4.6
TOTAL	58 236	58 236	100.0

⁽a) Estimated direct expenditure redistributed to statistical output programs.

⁽b) General services to other government departments and authorities, of which the major component is the use of ABS computer facilities.

ORGANISATION OF THE ABS

The ABS has offices located in Canberra, the six State capital cities and in Darwin. The present organisation of the Canberra Office and the officers heading the various units are as follows:

Division

- Economic Accounts
P. N. Atcherley

Branch

National Accounts K. R. Blackburn

Finance and Prices

L. C. Clements
International Accounts
A. W. Roche

- Demography, Social and Manpower

F. B. Horner

Demography and Social M. D. Giles

Manpower G. I. Neville

Population Census K. S. Watson

- Economic Censuses and Surveys

Statistical Applications and

D. W. Anderson

E. K. Foreman

- Computer Services

B. J. Harper

A. R. Bagnall

Services

Production and Distribution

T. R. Jones

Rural, Transport and Construction

F. D. Bagley

Classification, Integration and

Enterprise Statistics

R. W. Fergie

Statistical Services

J. E. Dulley

Statistical Applications

D. C. Leaver

Foreign Trade

A. J. Whittington

A. J. Willtington

Systems Development

E. W. Miller

Computer Services Planning

T. R. Govnich

Technical Systems and Production

B. H. Crook

Management Services

P. G. Howell

Co-ordination

W. McLennan

Data Management

F. J. von Reibnitz

The offices in State capitals and in Darwin are headed by:

Sydney D. W. Maitland

Co-ordination and Management

Melbourne N. Bowden Brisbane O. M. May

Adelaide B. E. Leonard Perth W. M. Bartlett

Hobart R. Lakin Darwin W. H. Mitchell

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